

Amendments to the Claims:

Please amend the claims as shown. Applicants reserve the right to pursue any cancelled claims at a later date.

1 – 21 (cancelled)

22. (new) A method for producing a layer system on a component, comprising;
providing a substrate that comprises a recess;
filling the recess with a first material;
covering a region of the filled recess with a base coating,

wherein the first material contains an undesirable component that adversely affects a property of the base coating if the undesirable component diffuses into the base coating;
and

applying a second material in the region of the filled recess by an intermediate removal heat treatment forming a local coating,

wherein during the removal heat treatment the second material reacts with the first material and extracts the undesirable component of the first material to inhibit a diffusion of the undesirable component into the base coating.

23. (new) The method as claimed in claim 22, wherein the second material covers the undesirable component of the first material in the recess and functions as a diffusion barrier.

24. (new) The method as claimed in claim 22, wherein the second material is removed together with the undesirable component which has been removed from the first material after the removal heat treatment and prior to the coating of the substrate by a grinding treatment.

25. (new) The method as claimed in claim 22, wherein the first material is a solder which contains a component as an agent for reducing the melting point as the undesirable component.

26. (new) The method as claimed in claim 22, wherein the agent for reducing the melting point consists of boron or a boron containing compound.

27. (new) The method as claimed in claim 22, wherein a soldering heat treatment is carried out using the first material prior to an application of the coating so that the first material bonds to the substrate in the recess.

28. (new) The method as claimed in claim 22, wherein the removal heat treatment is a separate diffusion heat treatment or the soldering heat treatment.

29. (new) The method as claimed in claim 22, wherein the substrate is an iron-base, nickel-base or cobalt-base superalloy, or a ceramic.

30. (new) The method as claimed in claim 22,
wherein the base coating is an MCrAlX alloy,
wherein M is an element selected from the group consisting of: Fe, Co and Ni,
and
wherein X is yttrium and/or a rare earth element.

31. (new) The method as claimed in claim 22, wherein a thickness of the local coating with the second material is thinner than the base coating of the component.

32. (new) The method as claimed in claim 22, wherein a surface area of the local coating with the second material is less than the base coating of the component

33. (new) The method as claimed in claim 22, wherein the second material is selected from the group consisting of: chromium, chromium-containing compounds or alloys, and a material that reacts with the undesirable component of the first material.

34. (new) The method as claimed in claim 22, wherein during the removal heat treatment the second material reacts with the first material and extracts the undesirable

component of the first material by forming a compound to inhibit a diffusion of the undesirable component into the base coating.

35. (new) The method as claimed in claim 22, wherein the second material is applied using a paste, a slurry, or a tape.

36. (new) The method as claimed in claim 22, wherein the component is a turbine component of a gas turbine or steam turbine.

37. (new) The method as claimed in claim 22, wherein the first material is a multicomponent material.

38. (new) A heat resistant component, comprising:

a substrate having a recess;

a first material that fills the recess;

a base coating that covers a region of the filled recess,

wherein the first material contains an undesirable component that adversely affects a property of the base coating if the undesirable component is in the base coating; and

a second material covering the region of the filled recess to form a local coating, the second material adapted to extract the undesirable component of the first material by reacting with the first material to inhibit a diffusion of the undesirable component of the first material into the base coating during a removal heat treatment.

39. (new) The heat resistant component as claimed in claim 38, wherein the heat resistant component is a turbine component of a gas turbine or steam turbine.

40. (new) The turbine component as claimed in claim 39, wherein the turbine component is selected from the group consisting of: a turbine blade, a turbine vane, and a combustion chamber lining.

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41. (new) The component as claimed in claim 33, wherein the heat resistant component is a refurbished component or a new component.